

## REMARKS

In response to the Official Action dated October 18, 2006, Claims 1, 18, and 34 have been amended to more particularly point out the invention that is disclosed in the subject application. The Official Action rejected the claims under 35 U.S.C. § 112 as failing to comply with the requirement for a written description. The claims were also rejected under 35 U.S.C. §103(a) based on six references that were combined in seven different ways.

The array of cited references cited in the Official Action fails to reconstruct the claimed invention. Claim 1 as presently amended is patentable in that, among other reasons, it requires:

*A deck plank made of a composite of polyvinyl chloride that is formed with internal closed cells and glass fibers that are imbedded in the closed cell polyvinyl chloride*

Claim 18 is patentable, among other reasons, in that it requires:

*A composite deck plank made according to the process comprising the steps of:*

*blending polyvinyl chloride with glass fibers that have a screen size in the range of 1/64 inch to 1/4 inch to make a polyvinyl chloride/glass melt in which the glass fibers are imbedded in the polyvinyl chloride;*

Claim 34 is patentable, among other reasons, in that it requires:

*A composite deck plank made according to the steps comprising:*

*providing a feed mixture to an extruder, said feed mixture including polyvinyl chloride and glass fibers, said polyvinyl chloride being in an amount of about 82% to 99% by weight of the mixture and said glass fibers being in an amount of about 1% to 18% by weight of the mixture;*

*Serial No. 10/800,501  
Amdt. dated April 5, 2007  
Reply to Office Action of October 18, 2006*

The specification clearly meets the written description requirement of 35 U.S.C. § 112 and none of the applied references, either alone or in combination, make Claims 1,2, 4, 6-8, 18-24 and 34-44 unpatentable under 35 U.S.C. § 103.

Rejection Under 35 U.S.C. § 112

The rejection under 35 U.S.C. § 112 misapplies the requirement for a written description. The applicant must convey to those skilled in the art that, as of the filing date sought, he was in possession of the invention. Ralston Purina Co. v. Far-Mar-Co., Inc., 772 F.2d 1570, 1575, 227 USPQ 177, 179 (Fed. Cir. 1985). The applicant does not have to describe every detail of his invention. In re Hayes Microcomputer Prods., Inc., 982 F.2d 1527, 1533, 25 USPQ2d 1241, 1246 (Fed. Cir. 1992).

Considering the specification of the application, there is no merit in the Official Action's argument that the disclosure does not reasonably convey to one skilled in the art that the inventor possessed the claimed invention at the time that the application was filed. The specification teaches a deck plank of composite polymer material and that the deck plank has top, bottom and two side surfaces.

In accordance with the subject invention, a deck plank made of a composite polymer material includes a top surface, first and second side surfaces that are orthogonal to the top surface, and a bottom surface that defines a generally concave surface between the first and second side surfaces. (Application, page 4, lines 12-15)

The plank 146 disclosed herein has been found to provide a stable interface with joists and other support surfaces. The bottom surface 154 defines a continuous concave surface that forms an arch with respect to the portion of the support surfaces between the ends 156 and 158. The ends 156 and 158 of bottom surface 154 cooperated with sides 150 and 152 to form corner junctions or curved shoulders 160 and 162 that contact the support surface.

This arrangement has been found to provide a plank that is stable and avoids rolling when walked on. (Application, page 14, lines 3 - 9)

Also according to the specification, the composite from which the deck plank is made has voids that compose in the range of 30% to 70% of the "*volume that is defined within the surface of the finished composite member.*"

In the preferred embodiment, the closed cells define voids in the composition which *voids compose in the range of 30% to 70% of the volume that is defined within the surface of the finished composite member.* (Application, page 11, lines 28 - 30) (emphasis added).

The application further includes drawings in which Figure 7 shows a profile of the deck plank having a top surface, a bottom surface, and two side surfaces. The drawings are part of the specification and must be considered in determining the adequacy of the written disclosure. Vas-Cath Inc. v. Mahurkar, 935 F2d 1555, 19 USPQ2d 1111 (Fed. Cir. 1991). See In re Wolfensperger, 302 F.2d 950, 133 USPQ 537, 541-42 (CCPA 1962) (The board's statement that "drawings alone cannot form the basis of a valid claim" is too broad a generalization to be valid and is, furthermore, contrary to well settled and long-established Patent Office practice.... The practical, legitimate enquiry in each case of this kind is what the drawing in fact discloses to one skilled in the art. ... The issue here is whether there is supporting "disclosure" and it does not seem, under established procedure of long standing, approved by this court, to be of any legal significance whether the disclosure is found in the specification or in the drawings so long as it is there.) The specification describes Figure 7.

Figure 7 is a cross-section of the deck plank disclosed herein taken along the lines 7-7 of Figure 1 and Figure 3. (Application, page 6, lines 13 - 14)

Figure 7 shows an end view or profile of the plank 146. Due to the curved bottom surface of the calibrator 112, a curved bottom surface is also established in the extruded length 110 and, therefore, also in plank 146. More specifically, plank 146 includes a top surface 148 and first and second side surfaces 150 and 152 that are substantially orthogonal to top surface 148. Side surfaces 150 and 152 are also oppositely disposed on the deck plank 146. A bottom surface 154 is located between the first and second side surfaces 150 and 152 and is oppositely disposed from the top surface 148. Bottom surface 154 defines a generally concave surface between the first side surface 150 and the second side surface 152. The concave surface of bottom surface 154 defines a generally continuous arc between the first side surface 150 and the second side surface 152. Bottom surface 154 defines an arc of substantially constant radius  $R_1$ . Preferably, the arc of radius  $R_1$  is greater than 50 inches. (Application, page 9, lines 18 - 29).

Accordingly, the disclosed plank is made of a composite material that is defined by top, bottom and side surfaces. The specification teaches that the composite has voids that compose in the range of 30% to 70% of the "*volume that is defined within the surface of the finished composite member.*" Thus, the specification includes a written description of the claimed invention that fully meets the requirements of 35 U.S.C. § 112.

#### Rejections Under 35 U.S.C. § 103

Also, the Claims are not made unpatentable by the collection of references that are discussed in the Official Action. The Official Action relies on Detterman (5,789,453) in a variety of combinations with five other references to support the claim rejections. In every combination, Detterman is the primary reference.

Detterman describes a composition of chlorinated polyvinyl chloride ("CPVC"). Detterman does not describe or suggest the use of *polyvinyl chloride* ("PVC") as required by Claims 1, 18 and 34. The Official Action essentially repeats some of the rejections of the Official Action dated February 8, 2006 except to add: "Since PVC set forth in the claims

includes both chlorinated PVC and non-chlorinate PVC, the chlorinated PVC of Detterman reads on Applicant's PVC." (Official Action, pg. 4, lines 3-5). In the "Response to Arguments" section, the Official Action contends: "The PVC as described in the claims does not exclude an embodiment wherein the composite polymeric material consisting of CPVC because PVC generically includes both non-chlorinated PVC and CPVC." (Official Action p. 10, lines 13-16). Thus, the fundamental argument on which the Official Action relies to support its art rejections is that "PVC" is generic for "PVC" and "CPVC." The Official Action cites no authority whatsoever in support of that essential point.

The Official Action's unsupported assertion that "PVC" is generic for "PVC" and "CPVC" is unsupported in the record and is contrary to the understanding of those skilled in the art. Attached are the declarations of Dr. Timothy Laher<sup>1</sup> and Dr. Michael Ferralli<sup>2</sup> that evidence the error of the basic assertion upon which every art-based rejection of the Official Action relies – namely, that "PVC" is generic for "PVC" and "CPVC."

Dr. Laher discusses the chemical differences between PVC and CPVC. (Laher ¶ 4). Those differences include: differences in low order structure (Laher ¶¶ 4a and 4b); that PVC is generally more reactive towards reagents capable of abstracting hydrogen than CPVC (Laher ¶ 4d); and that differences in polarity result in widely different chemical and physical properties (Laher ¶ 4g). Dr. Laher concludes: "The differences outlined [in paragraph 4 of his declaration] in these properties clearly demonstrate that the two polymers are quite distinct and must be

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<sup>1</sup> Cited herein as "(Laher ¶ \_\_\_\_)."

<sup>2</sup> Cited herein as "(Ferralli ¶ \_\_\_\_)."

considered as different polymers. ... Based on the chemical properties as given [in paragraph 4], CPVC and PVC are different polymers.” (Laher ¶ 5)

Similarly, Dr. Ferralli discusses the physical differences between PVC and CPVC. He identified differences in density, surface hardness, flexural strength, linear expansion coefficient, Strain, Maximum Operational Temperature and melting temperature range. (Ferralli ¶ 4a – 4g). Dr. Ferralli concludes: “The differences in these properties clearly demonstrate that the two polymers are quite distinct and must be considered as different polymers.” (Ferralli ¶ 5).

Nothing in the record supports, to a reasonable degree of scientific certainty, the assertion that “PVC” is generic for “CPVC.” On the contrary, Dr. Laher concludes “that the chemical structural properties of PVC cannot be ascertained, predicted, or demonstrated from the chemical structural properties of CPVC to an extent reasonably beyond such prediction from the properties of other related polymers.” (Laher ¶ 5). Similarly, Dr. Ferralli concludes that “the physical properties of PVC cannot be ascertained, predicted, or demonstrated from the physical properties of CPVC to an extent reasonably beyond such prediction from the properties of other related polymers.” (Ferralli ¶ 5).

The conclusions of Dr. Leher and Dr. Ferralli are consistent with the disclosure of Detterman. Detterman does not describe PVC as required by Claims 1, 18 and 34. Detterman describes a chlorinated polyvinyl chloride (“CPVC”) composition. Detterman distinguishes CPVC compositions from polyvinyl chloride (“PVC”) compositions. Throughout, Detterman identifies and discusses CPVC as a composition that is distinct from PVC. Indeed, Detterman teaches that CPVC is made from PVC! That teaching (which incorporates the very excerpt from

*Serial No. 10/800,501*

*Amdt. dated April 5, 2007*

*Reply to Office Action of October 18, 2006*

Table 1 that is cited in the Official Action) merely confirms the fact that CPVC and PVC are properly recognized in the art as different compositions!

All of the reference combinations of the Official Action rely on Detterman. Therefore, the argument that “PVC” is generic for “PVC and CPVC” is essential to the Official Action’s rejection of the claims under 35 U.S.C. § 103. However, there is no factual support for the Patent Office’s assertion that PVC is some generic form of CPVC. Indeed, all the evidence of record refutes the assertion that “PVC” really means “PVC and CPVC.” Therefore, none of the combinations of prior art proposed in the Official Action make the claimed invention unpatentable.

Apparently, the Official Action would not only require that the Applicant meet the requirements of Title 35, but that the Applicant must specifically disclaim all polymers that are mentioned in a reference that the Patent Office might later find. Such a requirement finds no support in the law. The claims are to be read in light of the specification. Markman v. Westview Instruments, Inc., 52 F.3d 967, 34 USPQ 2d 1321 (Fed. Cir. 1995). There is nothing in the specification to suggest that “PVC” means “CPVC” or that “PVC” is intended as a generic expression for materials other than PVC. To read the claims in such a way is contrary to decided law and to the plain meaning of the subject application and 35 U.S.C. § 112. Phillips v. AWH Corp., 415 F.3d 1303, 75 USPQ 2d 1321 (Fed. Cir. 2005).

The Official Action contends that "it is readily apparent" that the CPVC foam of Detterman would have a closed cell content from 30% to 70% by volume, but the Official Action offers no citation to Detterman to support that contention.

In addition, the other Official Action concedes that Detterman does not disclose various other requirements of Claims 1, 18 and 34 such as the amount of glass fiber or the amount of blowing agent. To overcome that shortcoming, the Official Action relies on citations to Detterman that merely suggest that reinforcing agents such as glass fibers, the quantity of blowing agent, the extruder temperature, and extruder screw speed can be varied for CPVC compounds to achieve an (undefined) intended purpose.

Such "obvious to try" arguments do not make the claimed deck plank unpatentable. If the prior art merely discloses numerous possible combinations but gives no direction as to which of those many choices is likely to be successful, it does not constitute a suggestion that makes the claim unpatentable. *In re Antonie* 195 USPQ 6 (CCPA 1977). Significantly, nothing in Detterman teaches that any quantity of glass fibers or blowing agent should be added to a "PVC." Detterman teaches only the use of CPVC and combinations thereof.

The Official Action improperly attempts to rely on a presumption that the claimed ranges are unpatentable unless Applicant demonstrates unexpected results. The Official Action cites *In re Aller*, 105 USPQ 233 (CCPA 1955) to support that contention. However, *In re Aller* applied to a situation in which the applicant's process was identical to that of the prior art except for variations in temperature and ingredient concentrations. In *In re Aller*, the proposed combination had met the ingredient limitations of the claim and the point of novelty was said to be in optimum ranges of temperature and ingredient concentrations.

*In re Aller* circumstances do not exist in this case. The Applicant's PVC product is not identical to the CPVC product of the cited prior art. The differences are not a matter of ingredient concentrations. The differences are in the identity of the ingredients themselves! The

CPVC of Detterman is not PVC. Nothing in the Application supports a conclusion that a CVPC plank would be the result of the claimed process. Therefore, *In re Aller* is inapposite to Claims 18 and 34 and there is no burden on the Applicant to show unexpected results. Rather, the burden remains on the Patent Office to demonstrate how the differences between the claimed invention and the combination of references are unpatentable.

Claims 18 and 34 are product-by-process claims. The Official Action relies on *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1983) to dispute the patentability of those claims irrespective of any differences in the process. The premise for applying *In re Thorpe* is that the product of Claims 18 and 34 is the same as the product of the combination of references as put forth in the Official Action.

*Thorpe* is inapplicable in this circumstance. In *Thorpe*, the Applicant conceded that the product of his process was the same as the product of the prior art method. In this application, the Applicant does not so concede. The Applicant had asserted and proved that the products are decidedly different – the product proposed by the Official Action is a CPVC and the product of Claims 18 and 34 is a PVC. Assuming that the collection of references could properly be combined according to the Official Action, the combination would result in a CPVC plank. As previously explained, the claims require a PVC plank. No proper reading of *Thorpe* supports a theory that process steps can be ignored when, as here, the reference results in a product that is different than the product that is claimed.

The patentable differences between Detterman and Claims 1, 18 and 34 are not made unpatentable by any combination of Detterman with the other references. No combination of Detterman with Nystrom produces a deck plank of polyvinyl chloride. Nystrom does not

describe a polymer material. Nystrom describes a wooden plank. It is cited in the Official action for the shape of its profile - not for its composition.

To support the rejection of various dependant claims, the Official Action variously combines Detterman and Nystrom with still other references. However, none of those additional references make any of the claims unpatentable. To support an obviousness conclusion, there must be a teaching or motivation to modify the reference to the claimed invention. *McGinley v. Franklin Sports, Inc.*, 60 USPQ2d 1001 (Fed. Cir. 2001). The Official Action does not suggest what teachings support the various combinations that are proposed. In making such combinations of multiple references, the Official Action clearly relies on the subject Application as a road map for assembling a mosaic of references to try to reproduce the invention as specified in various claims. Even if such combinations were proper (which they are not), the claimed invention does not result. No combination of the references produces "*a composite of a polyvinyl chloride*" as further specifically required by the claims.

None of Koffler, Patterson, Guntherberg, or Ittel describe closed cell PVC such as required by the claims. Koffler (6,818,676) is directed to a foam composition for use in cushion materials such as carpet padding. It is cited for its recitation of a physical blowing agent. There is no suggestion as to how that composition could be used in constructing deck planks or how the blowing agents therein described could be combined with other compositions that are used in deck planks. The Official Action argues that Koffler teaches a foam composition for use in fencing. It does not. Koffler suggests that the foam cushion therein described "provides for the use of a foam cushion as disclosed herein above for . . . fencing . . ." (Koffler, Col. 3, lines 14-39). That is to say that the foam cushion could be used in connection with fencing, i.e. fence

padding. The Official Action's resort to distorting the language of Koffler to imply that the same materiel that is used to make cushions could also be used to make fences, floors, siding, etc. demonstrates the fallacy and this argument.

Patterson (6,784,230) is directed to compositions wherein vinyl chloride resin is combined with a cellulosic material. In contrast, the subject application specifically teaches away from the use of such compositions for decking! This attempt to combine Patterson in contravention of the teachings of the subject application is improper. Patterson is applied for its recitation of citric acid as a chemical blowing agent. (Official Action, p. 11, lines 16-19). There is no suggestion in Patterson that the citric acid blowing agent therein described could be combined with other compositions such as described in the other cited references or in the subject application.

The Official Action cites Ittel (2005/0058822) with regard to the length of glass fibers as disclosed therein. Ittel concerns a composition wherein lignocellulosic or cellulosic material is combined with a synthetic fiber. Again, the subject application specifically teaches away from the use of cellulose compositions such as taught in Ittel making the combination of Ittel improper.

Guntherberg (6,566,436) is cited for its use of reinforcing glass fibers of particular dimensions in the composition therein described. Guntherberg is directed to a thermoplastic molding composition for use in garden buildings, garden equipment, garden furniture, garden accessories, and stock fences and animal cages. The Official Action speculates that such material "could serve as fencing material." (Official Action p. 12, lines 3-5). Fatal to that argument is the fact that nothing in Guntherberg suggests how the composition described in

*Serial No. 10/800,501  
Amdt. dated April 5, 2007  
Reply to Office Action of October 18, 2006*

Guntherberg could serve as a useful decking material or that such fencing materials are interchangeable with decking materials.

In summary, the Official Action has collected an array of references that recite isolated details of the Applicant's invention and then combined those references according to the Applicant's own teachings. Such a reconstruction of the invention from assorted patents that are collected from numerous prior art references does not make an invention unpatentable.

Claims 2, 4, 6-8, 19-24 and 35-44 all depend from Claims 1, 18 or 34. Accordingly, Claims 2, 4, 6-8, 19-24 and 35-44 are patentable for the same reasons as stated with respect to Claims 1, 18 and 34.

Accordingly, Claims 1, 2, 4, 6-8, 18-24, and 34-44 are believed to be in condition for allowance and such allowance is hereby respectfully requested.

Respectfully submitted,

By



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